

Patent claims

1. An illumination device, in particular for use in a motor vehicle, which is formed by an array of individual optical elements that are in each case assigned at least one semiconductor light source, in particular a light emitting diode,

characterized

in that the light entry opening of the optical elements have an elongate, essentially rectangular form,

in that the optical element have, perpendicular to the light entry area, a central region whose projection into a two-dimensional plane corresponds to a cylindrical two-dimensional Cartesian oval,

and in that said central region is combined with a parabolic reflector.

2. The illumination device as claimed in claim 1,

characterized

in that the outer areas A and B of the reflector are rotated in the direction of the central region of the optical element such that all beams emerging from the optical element are substantially parallel.

3. The illumination device as claimed in either of claims 1 and 2,

characterized

in that the outer areas A and B of the reflector are embodied such that they are mirror-coated or totally reflective.

4. The illumination device as claimed in one of the preceding claims,

characterized

in that the side areas E of the optical element are inclined in such a way that the optical element tapers from the light exit area G toward the light entry area F.

5. The illumination device as claimed in claim 4,
characterized
in that the side areas are formed, in particular by means of
mirror-coating or curvature, such that a large acceptance angle
is produced in the beam direction.
6. The illumination device as claimed in one of the preceding
claims,
characterized
in that the cross section of the light entry area of the
individual optical elements have, in a departure from the
rectangular form, a trapezoidal form whose side areas are
inclined by the angles α and β with respect to the normal to
the base area.
7. The illumination device as claimed in one of the preceding
claims,
characterized
in that at least one of the individual optical elements is
assigned a plurality of semiconductor light sources.
8. The illumination device as claimed in one of the preceding
claims,
characterized
in that the individual semiconductor light sources can be
switched individually.
9. The illumination device as claimed in one of the preceding
claims,
characterized
in that the optical elements and the semiconductor light
sources are arranged such that they are displaceable with
respect to one another.
10. A method for driving an illumination device as claimed in

one of the preceding claims,
characterized
in that the semiconductor light sources can be driven
individually in a manner dependent on the desired radiation
characteristic,
it being possible in this case for the semiconductor sources to
be entirely or partly activated.

11. The method as claimed in claim 10,
characterized
in that, for the case where a plurality of semiconductor light
sources are assigned to an individual optical element, these
are driven in a manner dependent on the desired radiation
characteristic.

12. The method as claimed in either of claims 10 and 11,
characterized
in that the lenses and the semiconductor light sources are
displaced relative to one another for the purpose of changing
the emission characteristic of the illumination device.

13. The use of the illumination device as claimed in one of
the preceding claims as a motor vehicle headlight for
asymmetrical illumination of the surroundings in front of a
motor vehicle.